

WM Record File 101.6 WM Project 10  
 Docket No. \_\_\_\_\_  
 PDR   
 LPDR   
 Distribution: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 (Return to WM, 623-SS) cz

Distribution 3101  
 WM   
 WMA r/f JKennedy  
 NMSS r/f WRehfeldt & r/f  
 CF PDR  
 REBrowning  
 PAItomare  
 LBHigginbotham  
 HJMiller  
 RRBoyle  
 SMCoplan  
 JLinehan  
 MRKnapp  
 MJBell  
 JTGreeves

MAY 1 1984

MEMORANDUM FOR: David Brooks  
 Geochemistry Section,  
 Geotechnical Branch  
 FROM: Warren Rehfeldt  
 BWIP Project Section,  
 Repository Projects Branch  
 SUBJECT: DRAFT SITE TECHNICAL POSITION FOR BWIP - SUPPORT  
 DOCUMENT ON SOLUBILITIES

As requested in a January 31, 1984 memorandum from Philip Justus to Robert Wright, we have reviewed the draft document "Assessment of Radionuclide Apparent Solubilities by Conservative Estimation of Steady-State Concentration". This document represents the basis for geochemical issues defined by NRC for the BWIP site.

Based on our review, there appear to be some of inconsistencies in the document that should be addressed. These are indicated on the attached "marked-up" copy of the document. Our specific comments are as follows:

Executive Summary: Reference to the term "near field" appears in the second paragraph on page 4 (and elsewhere in the document). "Near field" is considered to be synonymous with "disturbed zone", as defined in 10 CFR Part 60. To be consistent with the terminology used in the draft SCA for BWIP (NUREG-0960), "near field" should be replaced by "disturbed zone" where appropriate. If, in any case, "near field" is the preferred term, additional definition will be needed so that confusion or conflict will not result.

The term "solid compositions", in consideration 1 at the bottom of page 4, is an abstraction which should be clarified.

1.0 Introduction: Some discussion is needed relative to the NRC definition of "solubility" and the BWIP-proposed definition (BWIP Operational "solubility" definition presented at the January 9-12, 1984 meeting on geochemistry held in Richland, Washington).

1.2 Regulatory Framework: Pertinent sections from 10 CFR Part 60 are provided on pages 8 and 9. At least three sections, references (e), (f) and (g), are from the proposed rule and have been changed either in section designation or wording. Sections from the final rule should be referenced.

8406080119 840501  
 PDR WASTE  
 WM-10 PDR

00826

2.0 Background: The descriptions of "geologic HLW repository" and "geologic setting", on page 9, should be more specific and conform to the definitions of terms provided in 10 CFR Part 60.

3.1 Speciation: On page 13, and elsewhere in the document, terms such as "repository-groundwater system" and "groundwater-rock system" appear to be interchangeable (see also mark-up pages 14 and 20, e.g., "rock-water system"; "host rock solid components and groundwater"). It is not clear if the variation is intended.

3.3 Redox Conditions: The references cited on pages 16-17 should be checked. Several are not listed with the references on pages 30-31, or are incorrectly cited (see attached "mark-up" copy).

4.0 Summary of Technical Position: The relationship between "near field" and "disturbed zone" (as used in 10 CFR Part 60 and NUREG-0960) should be pointed out in paragraph 3. at the top of page 28.

References: The format on pages 30-31, is not consistent with NRC practice (see page 12 of NUREG-0650). The individual entries are not all presented in the same manner (e.g., date of publication usually follows the authors name).

**"ORIGINAL SIGNED BY"**

Warren R. Rehfeldt  
Repository Project Branch  
Division of Waste Management

Enclosure:  
As stated

OFC	:WMP:ejc	:WMP	:WMP	:	:	:	:
NAME	:WRR	:RJWright	:JMiller	:	:	:	:
DATE	:4/24/84	:4/ /84	:4/ /84	:	:	:	: